EPI-LOG

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Tuberculosis in King County: Part 2

As described in the November 2006 issue of the EPI-LOG, King County continues to face challenges in the control of tuberculosis (TB). In this issue, we will discuss the important role that King County health care providers play in the control of TB in our community.

ActiveTB Disease

King County health care providers should consider active TB disease when a patient presents with a cough persisting longer than two to three weeks. The clinical suspicion of TB increases with the presence of hemoptysis, fever and/or weight loss. TB should always be considered when the patient has an epidemiological **risk factor,** such as:

- a history of TB exposure or of latent TB infection (LTBI),
- homelessness or living in a medically underserved, low-income community
- birth in a foreign country with a high prevalence of TB
- residence in a nursing home, correctional institution, mental institution, or other long-term residential facility,
- employment in health care, or
- a medical condition that increases the risk for LTBI to progress to disease (e.g. HIV, immunosuppressive medications or conditions, renal failure).

When there is a clinical suspicion of pulmonary TB, providers should obtain a chest radiograph (CXR). If radiographic findings are consistent with TB disease, obtain three sputum samples for AFB (acid-fast bacilli) smear and culture. Early morning sputum specimens are preferred.

A negative tuberculin skin test (TST) does not exclude the diagnosis of TB disease because 20 to 25% of active TB cases have a negative TST. CXR may be normal or atypical in HIV-infected patients with active TB; thus sputum examinations should be considered regardless of CXR findings in HIV-infected patients and other immunocompromised patients.

AFB sputum smears may be positive in only 50-60% of pulmonary TB cases. Even cultures for *Mycobacterium tuberculosis* can be negative in up to 10% of TB cases, and might not yield results for weeks. Because of this, Washington State Public Health Laboratory offers the Amplified Mycobacterium Tuberculosis Test (MTD), to speed diagnosis. MTD has an overall sensitivity of 70-80%, and a rapid turn around time. Consult the King County TB Control Program (206- 731-4579) to order the MTD for cases where the risk of TB transmission to others is increased, including when suspected cases live or work in institutions such as health care facilities, jails, and schools.

The importance of obtaining adequate sputum samples, and other specimens (such as those obtained during surgery) for AFB cultures, prior to initiation of empirical TB therapy, cannot be overstated. These isolates, and subsequent susceptibility testing, guide appropriate TB therapy, which is especially important as drug resistance mounts. In 2005, 10% of TB isolates in King County were isoniazid resistant and 1.5% were multi-drug resistant. CDC has issued warnings of extensively drug-resistant TB in a recent MMWR. (*MMWR* 2006, 55 [No. 43]).

When there is a high clinical suspicion for active pulmonary TB, treatment should not be delayed because of negative AFB smears. Please contact the TB Control Program (as mandated by law in Washington State) at (206)731-4579 (24 hour TB Control Program report line) within 1 working day so that arrangements can be made for case management and directly observed therapy (DOT). The TB Control Program will also promptly investigate contacts of any potentially infectious TB case.

Latent TB Infection:

There are an estimated 100,000 people with LTBI in King County, and most new cases of active TB disease come from this pool of people. Because the TB Control Program's primary focus is on (1) preventing the spread of TB from infectious patients with active TB disease and (2) conducting timely and thorough contact investigations and treatment of the contacts, we rely on King County providers to take an active role in providing targeted testing and treatment for LTBI. TB testing is targeted to identify persons at high risk for TB who would benefit from treatment of LTBI. This process includes assessing patients for the risk factors listed above that increase the risk of progressing from latent infection to active TB. Providers should test high risk patients using TST, and obtain a chest X-ray when the TST is positive.

Tuberculosis Skin Testing Interpretation:

Those who are at highest risk of developing active TB are recent close contacts of an infectious TB case within the past 2 years, are HIV infected, are severely immunocompromised persons due to medications or organ transplant, or patients with fibrotic changes on CXR consistent with "old, healed" TB. **The cut-off point for considering a TST "positive" in this group is ≥5 mm of induration.** Patients with CXR consistent with "old TB" who have a TST ≥5 mm of induration should have 3 sputum samples for AFB smear and culture collected. Treatment for LTBI must be deferred until cultures are returned as positive. Approximately 5% of these patients have culture-positive pulmonary TB even if they are asymptomatic.

Persons whose TST should be considered positive with ≥10 mm of induration include persons who emigrated from high prevalence countries in the last five years, injection drug users, residents and employees of nursing homes, prisons, and institutions, and persons with medical conditions that places them at high risk (e.g. diabetes, chronic renal failure, malignancy).

Persons without risk factors for TB infection should generally not be screened for LTBI. If testing is done for administrative or legal purposes, the cut-off for a positive TST in a person without risk factors is ≥15mm.

An alternative to TST that reduces the risk of false-positives is an interferon-gamma release assay (IGRA). The only IGRA

currently licensed for use in the United States is Quantiferon-Gold™, available in Washington State at the Spokane Regional Health District (509 324-1600) and Providence St. Peter's Medical Center in Olympia (888-492-9480). For more information, please contact these laboratories directly or visit the following website for more information: www.srhd.org/downloads/health_disease/QuantiFERON.pdf.

Summary:

- **When active TB is suspected, pursue appropriate radiographic and microbiologic examinations to make or exclude the diagnosis and to guide therapy.**
- **Report suspected cases of active TB to Public Health within one working day by calling (206) 731-4579.**
- **When reporting active or suspected cases, discuss your plans for directly observed therapy and case management with Public Health.**
- **Systematically assess all patients for TB risk factors, and provide testing and treatment for LTBI when appropriate**.

Last but not least, we sincerely appreciate our community's health care providers who diagnose, report, and collaborate in the management of TB cases. We also would like to thank the various institutions and agencies which have supported our surveillance, case management and contact investigation efforts.

Disseminated Gonorrhea in King County

Since March of 2006, clinicians in King County have reported 15 cases of disseminated gonococcal infection (DGI). Two additional cases have been reported in Snohomish County. Although DGI was relatively common in the 1970s, strains of *Neisseria gonorrhoeae* prone to dissemination have been rare in recent decades, with only two cases of DGI reported to Public Health – Seattle & King County between 1991 and 2005.

The first case of DGI occurring in 2006 involved a man who presented with a septic knee after having sex with multiple partners while in Southeast Asia. Clinicians in Washington State have subsequently reported 16 additional cases of DGI, 12 in men and 4 in women. Three of the cases have occurred among men who have sex with men, and all remaining male cases reported sex with women only. Two cases had negative synovial fluid cultures, but positive synovial fluid nucleic acid amplification tests. Most cases have required hospitalization and intravenous antibiotics, and many have undergone surgical procedures. At least 7 cases occurred in users of cocaine or crack cocaine, and 5 cases reported engaging in commercial sex. Microorganisms were available for antimicrobial susceptibility testing in 9 cases, all of which were resistant to fluroquinolones.

DGI is a rare complication of gonorrhea. Patients can present with a monoarticular purulent arthritis, or the arthritis-dermatitis syndrome, which manifests as an asymmetric, oligoarticular or polyarticular arthritis, arthralgias or tenosynovitis which develops over several days and primarily involves the knees, elbows and distal joints. Approximately 75% of cases have dermatologic manifestations, most frequently discrete papules, pustules or vesicles, sometimes with a hemorrhagic or necrotic component. Most patients do not have concurrent symptoms of genital tract infection, though genital tract, rectal or pharyngeal cultures are usually positive. Meningitis, osteomyelitis, septic shock, endocarditis and acute respiratory distress syndrome are rare complications.

Clinicians should consider the diagnosis of DGI in adolescents and adults presenting with new symptoms of arthralgia or arthritis. Evaluation should include culture of the blood, and culture and nucleic acid amplification testing of the genital tract, synovial fluid and unroofed skin lesions. If patients report having receptive oral or anal sex, clinicians should be culture these sites as well. Empiric therapy should include intravenous ceftriaxone or an alternative third generation cephalosporin. All cases should be reported immediately by telephone to Public Health at (206) 731-2275.

In addition, Public Health recommends pharyngeal cultures for gonorrhea be included in routine STD evaluations of women who report having receptive oral sex in the preceding 60 days and who use cocaine or crack cocaine and/or who exchange sex for money or drugs.

Disease Reporting

AIDS/HIV	(206) 296-4645
STDs	(206) 731-3954
TB	(206) 731-4579
All Other Notifiable Communicable Diseases (24 hours a day)	(206) 296-4774
Automated reporting line for conditions not immediately notifiable	(206) 296-4782

Hotlines

Communicable Disease	(206) 296-4949
HIV/STD	(206) 205-STDS

Reported Cases of Selected Diseases, Seattle & King County 2006

	Cases Reported in November		Cases Reported Through November	
	2006	2005	2006	2005
Campylobacteriosis	21	29	247	314
Cryptosporidiosis	2	5	38	66
Chlamydial infections	552	624	4,822	5,192
Enterohemorrhagic *E. coli* (non-O157)	0	1	2	6
***E. coli* O157: H7**	1	1	36	36
Giardiasis	9	11	109	140
Gonorrhea	173	203	1,810	1,650
***Haemophilus influenzae* (cases <6 years of age)**	0	0	3	2
Hepatitis A	1	1	17	15
Hepatitis B (acute)	4	4	16	22
Hepatitis B (chronic)	61	64	770	640
Hepatitis C (acute)	0	0	7	9
Hepatitis C (chronic, confirmed/probable)	99	91	1,356	1,255
Hepatitis C (chronic, possible)	17	31	247	342
Herpes, genital (primary)	65	77	716	722
HIV and AIDS (including simultaneous diagnoses with AIDS)	18	12	241	323
Measles	0	0	0	1
Meningococcal Disease	1	1	10	14
Mumps	0	0	2	1
Pertussis	7	43	102	289
Rubella	0	0	0	1
Rubella, congenital	0	0	0	0
Salmonellosis	12	14	189	206
Shigellosis	4	5	51	70
Syphilis	13	22	189	154
Syphilis, congenital	0	0	0	0
Syphilis, late	6	10	71	69
Tuberculosis	11	11	130	101

The *EPI-LOG* is available in alternate formats upon request.